REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-7 and 9-15 are presently active in this case, Claims 1, 7, 9, and 15 having been amended and Claims 8 and 16 having been canceled without prejudice or disclaimer by way of the present Amendment. Care has been taken such that no new matter has been entered. (See, e.g., page 12, lines 13-16, of the specification.) The Applicant respectfully requests the entry of the amendments set forth herein as the amendments to the independent claims merely incorporate previously considered dependent claims, and thus no new issues have been raised.

In the outstanding Official Action, Claims 7 and 15 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. More specifically, the Official Action indicates that the originally filed specification does not provide support for the limitation "wherein the inner space of the vacuum chamber maintained in vacuum remains constant while the distance between the first electrode and the second electrode is varied." The Official Action surmises that "when the distances are varied the inner space of the vacuum chamber maintain in vacuum will vary because, for example, more of the lower electrode will protrude into the vacuum chamber thereby reducing the space in the vacuum chamber maintained in vacuum." The Applicant respectfully disagrees with this assertion and thus traverses the written description rejection of Claims 7 and 15.

Firstly, the Applicant notes that the originally filed specification includes a written description of such a feature on page 12, lines 13-16. Claims 7 and 15 have been amended to utilize the terminology used therein. Thus, these claims clearly have written description support in the originally filed specification. For at least this reason, the Applicant requests the withdrawal of the written description rejection.

Secondly, these claims define that the volume of the vacuum chamber maintained in vacuum is maintained constantly regardless of the distance between the upper electrode and the lower electrode. The Official Action asserts that more of the lower electrode will protrude into the vacuum chamber thereby reducing the space in the vacuum chamber maintained in vacuum. However, regarding Claims 7 and 15, the lower electrode does not move and merely the upper electrode moves upward and downward. Therefore, this assertion is improper. Furthermore, when the upper electrode moves upward, an upper space in the vacuum chamber (11) is reduced; however, at the same time a lower space in the vacuum chamber (11) is increased. Therefore, the total space in the vacuum chamber maintained in vacuum remains constant.

Accordingly, the Applicant respectfully requests the withdrawal of the written description rejection of Claims 7 and 15.

Claims 1-5, 8-13, and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al. (WO 00/24047) in view of Koshimizu (U.S. Patent No. 5,997,687). Claims 6 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al. in view of Koshimizu and further in view of Denpoh (U.S. Pub. No. 2003/0062128) or

Tanaka et al. (U.S. Pub. No. 2004/0020599). The Applicant notes that the subject matter of previously pending Claims 8 and 16 have been incorporated into independent Claims 1 and 9, respectively. For the reasons discussed below, the Applicant traverses the obviousness rejections.

The basic requirements for establishing a *prima facie* case of obviousness as set forth in MPEP 2143 include (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the reference (or references when combined) must teach or suggest all of the claim limitations. The Applicant submits that a *prima facie* case of obviousness has not been established in the present case because the cited references, either when taken singularly or in combination, do not teach or suggest all of the claim limitations.

Claims 1 and 9 of the present application each recite an apparatus comprising, among other features, a bellows unit for airtightly sealing an opening, the bellows unit having an upper bellows portion, a lower bellows portion, and a ring member connected to the driving mechanism, wherein the ring member is disposed between the upper bellows portion and the lower bellows portion, wherein the upper bellows portion and the lower bellows portion are oppositely extended and contracted in accordance with a vertical movement of the ring member while maintaining a constant total length of the bellows unit. The Applicant submits that the cited references, either when taken singularly or in combination, do not teach or suggest all of the above limitations.

The Official Action cites the Hirayama et al. reference for the teaching of a semiconductor manufacturing apparatus having a fixedly disposed first electrode (104), a shower plate (114), and a bellows unit (106). The Official Action indicates on page 3 that the bellows unit has an upper bellows portion, a lower bellows portion, and a ring-shaped member, which is described with reference to the uppermost portion of reference number 102 that is separated by a line in Figure 2 "which denotes a ring-shaped member and is disposed between upper and lower portions of the bellows." The Official Action notes that the Hirayama et al. reference does not disclose that the shower plate is a second electrode, and cites the Koshimizu reference to supplement this deficiency. (The Applicant notes that no specific discussion is provided in the Official Action regarding the subject matter of previously pending Claims 8 and 16, which have been incorporated into their respective independent claims.)

Claims 1 and 9 each recite a ring member disposed between the upper bellows portion and the lower bellows portion. However, the Applicant respectfully submits that the Hirayama et al. reference does not disclose such features. The bellows (106) of the Hirayama et al. reference has an upper end connected to a cylinder (107) and a lower end connected to the vacuum vessel bottom plate (102). However, the Hirayama et al. reference does not disclose a ring member, as recited. The cross-sectional line A--A' in Figure 2 does not teach such a ring member, but rather is merely an imaginary line used to show were a cross-sectional view is taken from. The Hirayama et al. reference is totally silent regarding a ring member disposed between an upper bellows portion and a lower bellows portion.

Additionally, the Koshimizu reference fails to supplement this deficiency in the teachings of the Hirayama et al. reference.

Furthermore, Claims 1 and 9 each recite that the upper bellows portion and the lower bellows portion are oppositely extended and contracted in accordance with a vertical movement of the ring member while maintaining a constant total length of the bellows unit. By way of illustration and not limitation, Figures 1, 3, and 4 depict embodiments in which a ring member (18a) moves, while maintaining a constant total length of the bellows unit (18) due to the opposite expansion and contraction of upper bellows portion (18b) and lower bellows portion (18c). Thus, despite the movement of the ring member a total length of the bellows unit remains **constant**. In contrast, the Hirayama et al. reference depicts a bellows (106) connected in between the cylinder (107) and the vacuum vessel bottom plate (102), and therefore, a total length of the bellows 106 is **varied** depending on the position of the cylinder (107). Accordingly, the Hirayama et al. reference fails to teach, suggest or even imply a bellows unit having the recited configuration. Additionally, the Koshimizu reference fails to supplement this deficiency in the teachings of the Hirayama et al. reference.

Still further, Claims 1 and 9 recite a second electrode or a second structure that is vertically **movable** so as to vary a distance between the first electrode or structure and the second electrode or structure. In contrast, the Hirayama et al. reference merely describes that the cylinder (107) (which not correspond to the second electrode or second structure of Claims 1 and 9) moves upward and downward. However, the shower plate (114) of the Hirayama et al. reference, which is being cited as corresponding to the second electrode or

second structure of Claims 1 and 9, is fixed to the vacuum vessel and therefore **unmovable**. Accordingly, the Hirayama et al. reference fails to teach, suggest or even imply a second electrode or second structure having the recited configuration. Additionally, the Koshimizu reference fails to supplement this deficiency in the teachings of the Hirayama et al. reference.

Accordingly, the cited references, either when taken singularly or in combination, do not teach or suggest all of the limitations recited in independent Claims 1 and 9. Thus, a *prima facie* case of obviousness has not been established in the present case, and therefore the Applicant respectfully requests the withdrawal of the obviousness rejection of Claims 1 and 9.

The dependent claims are considered allowable for the reasons advanced for the independent claim from which they respectively depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed nor suggested by the applied references when those features are considered within the context of their respective independent claim. For example, Claims 7 and 15 recite that the distance between the lower electrode and the upper electrode is varied while constantly maintaining a volume of the vacuum chamber maintained in vacuum. However, the cited references fail to teach, suggest or even imply the above features. Accordingly, the Applicant respectfully requests the withdrawal of the obviousness rejections of the dependent claims.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

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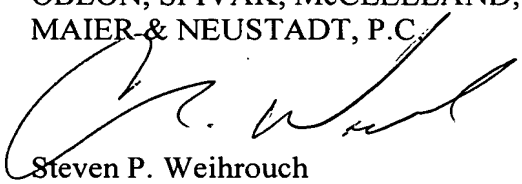

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